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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,767	11/15/2006	Chunhua Cao	19599.05US1	5941
25541 7590 07/29/2009 NEAL, GERBER, & EISENBERG SUITE 1700 2 NORTH LASALLE STREET CHICAGO, IL 60602			EXAMINER CORMIER, DAVID G	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 07/29/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ipdocket@ngelaw.com

Office Action Summary	Application No. 10/566,767	Applicant(s) CAO ET AL.	
	Examiner DAVID CORMIER	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01252008</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 25 January 2008 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but those references, for which copies have not been supplied, have been crossed out and are not initialed.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Regarding Claim 1, Claim element "water level detecting means" is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

5. Applicant is required to:

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- (a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- (b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

6. If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

- (a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- (b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP 2181 and 608.01(o).

7. Specifically regarding Claims 1, 4 and 9, the scope of the words "detergent" and "modifying agent" is unclear because there appears to be a contradiction by having a process which specifically does not use a "detergent" but uses a "modifying agent." The contradiction lies in the fact that a detergent, broadly defined, is any cleansing agent, and a modifying agent, added to an electrolyzed water, would seem to also qualify as a

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cleansing agent. To further confuse matters as to the proper interpretation of these words, Applicant, in paragraph 93 of the specification, describes the modifying agent as possibly being "a mixture of one or more detergents."

8. Claims 2 and 3 recite the limitations "the water drainage tube" and "the liquid outlet tube." There is insufficient antecedent basis for these limitations in the claims.

9. Also regarding Claim 3, it is unclear if one or two input ends are being claimed for the dosing and feeding device. It is recited that the device has "an input end and a plurality of output ends," then there are limitations directed to "one input end" and "the other input end."

10. Regarding Claim 7, since no specific orientations have been claimed, it is unclear which dimensions of the device are the "thickness," "width," and "height."

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. **Claims 1 and 4-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sumida et al. (US 5,947,135).**

13. Regarding Claim 1, Sumida discloses a washing machine, "dishwasher," for washing items (abstract) using washing water without addition of detergent by the user comprising:

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- a. a housing (Figure 1, the "heat exchange duct," 30, is broadly and reasonably interpreted as a housing);
 - b. a washing tub for containing the items to be washed (12);
 - c. an outer tub for containing the washing tub (Figure 1, the cabinet, not labeled);
 - d. a water supply device for supplying water into the washing tub (Figure 1, elements (1, 3, 4, 9-11, 19, 20 and 50));
 - e. an electrolyzed water-generating device connected with the water supply device for providing electrolyzed water (2);
 - f. a water level detecting means for detecting a level of water supplied into the washing tub, "water level switch" (Figure 3, S5; col. 5, lines 56-67).
 - g. a modifying agent feeding device ("modifying agent" is considered to be an extremely broad term encompassing detergents, softeners, ions, or even water) for providing a modifying agent into the washing tub, wherein the modifying agent feeding device is connected with the water supply device (the modifying agent feeding device reads on the "acid washing water tank," 6).
14. The phrase "water level detecting means for detecting" is considered to invoke a means-plus-function interpretation. The water level detecting means is being interpreted as being met by the "water level switch" of Sumida.
15. The phrases "wherein the electrolyzed water-generating device provides electrolyzed water with a pH of at least 8.5" and "wherein the washing machine maintains...surface tension from 25 to 40 mN/m during washing operation" are

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functional limitations, which are considered to be met by the apparatus as taught by Sumida because it meets all the claimed structural limitations.

16. Also the phrase of the preamble “for washing items using washing water without addition of a detergent by the user” is considered to be intended use of the apparatus as taught by Sumida. The claimed intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art.

17. Regarding Claims 4-6, Sumida is relied upon as applied to Claim 1. Sumida further discloses that the electrolyzing cell of the electrolyzed water generating device (2) and the liquid storage container of the modifying agent device (6) are externally hung and mounted on a lateral surface of a back of the washing machine (see Figure 1). The housing has a first perforation at an upper part (the portion where pipe, 11, leads into the housing) and a second perforation at a lower part of the rear panel of the housing (the portion where pipe, 18, exits the housing) for allowing a second drainpipe to pass through the second perforation for connecting to a water drainage tube (18).

18. Regarding Claim 8, the limitation of the electrolyzing cell and/or the liquid storage container being covered with a covering board is broadly and reasonably interpreted to simply read on the back panel of the housing of the dishwasher (see Figure 1).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

20. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

21. **Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (US 5,947,135).**

22. Regarding Claims 2 and 3, it should be noted that the limitations to the connections between various elements, tubes, pipes and drains are considered to be extremely broad because the various connections have not been claimed such that the elements are directly connected to each other; hence, the following is just one possible interpretation of how Sumida could read on the claimed invention

23. Regarding Claims 2 and 3, which depend from Claim 1, Sumida is relied upon as applied to Claim 1. Sumida further discloses that the water supply device comprises:

- a. a water supply tube for connection with a tap water source (19);
- b. a water supply valve (1);

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- c. a water supply port provided on the upper part of washing tub (the hole where pipe, 11, meets the cabinet body);
- d. a first water supply path (3) connecting the water supply valve and the water supply port (pipe, 3, is broadly and reasonably interpreted to read on the claim because it does connect the water supply valve and the water supply port, though it may not *directly* connect them);
- e. a second tap water supply tube connected to the output end of water supply valve (20), wherein the electrolytic water generating device (2) and the modifying agent feeding device (6) are positioned at the output end of the second tap water supply tube (see Figure 1);
- f. a third tap water supply tube (4) connected with the output end of water supply valve, and the modifying agent feeding device is connected with the output end of the third tap water supply tube (pipe, 4, is broadly and reasonably interpreted to be connected with the output end of the water supply valve, though it may not be *directly* connected to the output end), and wherein the electrolytic water generating device comprises:
 - i. an electrolyzing cell having a plurality of diaphragms (Figure 2, 23a-d), a water inlet (Figure 2, 50), a cathode chamber (24a-c) and an anode chamber (25a-b);
 - ii. a power supply converting device for converting alternating current into direct current to provide DC current to the electrolyzing cell (Figure 4, see rectifier, 36, and smoothing capacitor, 37; col. 6, lines 6-20); wherein the water

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inlet of the electrolyzing cell is connected to the second tap water supply tube of the output end of the water supply valve (see Figures 2 and 3, part 20); wherein the cathode chamber and the anode chamber of the electrolyzing cell are connected to a first drainpipe for providing electrolytic solution to the washing tub (Figure 2, the portion that connects to pipe 3), and a second drainpipe connected to the water drainage tube (Figure 2, the portion that connects to pipe 4), and wherein the modifying agent feeding device comprises:

- iii. a liquid storage container having a bottom (Figure 1, part 6);
- iv. a dosing and feeding device having an input end and an output end, set at the lower part of the liquid storage container for supplying the modifying agent with rations, "valve" (10), wherein one input end of the dosing and feeding device is connected with the liquid outlet tube at the bottom of the liquid storage container (see Figure 1), and the other input end of the dosing and feeding device is connected with the third tap water supply tube (4) of the water supply valve (these are considered to be connected, though not *directly* connected), wherein one output end of the dosing and feeding device is connected with the water supply port which is provided on the upper part of washing tub (Figure 1, pipe 11 goes to the water supply port).

24. Sumida does not expressly disclose that there is a plurality of outlet ends, where one outlet end is connected with the water drainage tube and the second drainpipe through an emptying pipe. However due to the broadness of the "connecting" language, this simply reads on having a duplication of pipe 11, which would have been obvious to

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one of ordinary skill in the art. The mere duplication of parts is not given patentable significance unless a new and unexpected result is produced. MPEP 2144.04 (VI) (B) – Duplication of Parts.

25. In the event that Claims 4-6 and 8 are not considered to be anticipated, they are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (US 5,947,135).

26. Regarding Claims 4-6, Sumida is relied upon as applied to Claim 1. If it is determined that Sumida does not expressly disclose that the electrolyzing cell and/or the liquid storage container of the modifying agent feeding device is externally hung and mounted on a lateral surface of the housing back of the washing machine, then because it appears, in Figure 1, that these devices are externally hung and mounted on a lateral surface of the washing machine, it would have been obvious to one of ordinary skill in the art, who is looking at the figures, to externally hang and mount them on a lateral surface of the washing machine.

27. Regarding Claim 8, the limitation of the electrolyzing cell and/or the liquid storage container being covered with a covering board is broadly and reasonably interpreted to simply read on the back panel of the housing of the dishwasher (see Figure 1).

28. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (US 5,947,135).

29. Sumida is relied upon as applied to Claim 4. Sumida does not expressly disclose that the electrolyzing cell and/or the liquid storage container has a thickness in the range from 1/10 to 1/4 of that of the washing machine, and wherein the electrolyzing cell

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and/or the liquid storage container has a width and height which are less than that of the washing machine. It would have been obvious to one of ordinary skill in the art to try various shapes and sizes to achieve the predictable result of saving space.

Furthermore, it has been held that when the only difference between the prior art and the claimed invention is to a relative size difference, and the claimed device does not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. MPEP 2144.04 (IV) (A) – Changes in Size/Proportion.

30. Claim 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (JP 10-33448) in view of Sumida et al. (US 5,947,135).

31. Hasegawa discloses a dishwasher which supplies tap water to an opening (see Figure 1, the inlet to element 2), the tap water passes through a positive ion stripper (2; machine translation paragraph 19) before entering the electrolyzing cell (3; machine translation paragraph 19). The electrolyzing cell produces alkaline and acidic water, with the alkaline water being sent to tanks 4A and 4B and the acidic water being sent to tank 5 (machine translation paragraph 20). During washing, the alkali water is added to the tub and a modifying agent, "detergent," from hopper 19 is also added (machine translation paragraph 25). After washing, the acidic solution from tank 5 is used to rinse and sterilize the items (machine translation paragraph 25). Hasegawa also discloses that the pH of the alkaline water may be in the range of 10 or more (machine translation paragraph 15).

32. Hasegawa does not expressly disclose that the tap water is electrolyzed, rather it is water which has been softened by the positive ion stripper. Hasegawa also does not

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expressly disclose that the electric conductivity of the washing water is from 261 uS/cm to 875 uS/cm.

33. Sumida discloses a dishwasher which washes by using alkaline and acidic solutions prepared by electrolyzing pure tap water (abstract; Figure 1).

34. Because it is known in the art that it is effective to wash using electrolyzed water produced from pure tap water, and the results of the modification would be predictable, namely, an effective method of producing electrolyzed water, it would have been obvious to one of ordinary skill in the art at the time of the invention that the process of Hasegawa could be performed with pure tap water rather than with water from which positive ions have been removed. And furthermore, because it is known to use different types of detergents, or to use them in various amounts, in response to various levels of soiling on items, it would have been obvious to one of ordinary skill in the art to optimize the concentration of detergents which could produce a washing solution having an electrical conductivity within the claimed range.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID CORMIER whose telephone number is (571) 270-7386. The examiner can normally be reached on Monday - Thursday 8:30 - 6:00.

36. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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37. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

/DGC/
David Cormier
07/22/2009